

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 9 and 10 provides for the use of the coating composition recited in claim 1, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 9 and 10 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-9, 11 and 12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Coates et al. U.S. Patent No. 6,217,955.

5. Coates teaches a reflective polarizer comprising a chiral polymerizable mesogenic material which contains:

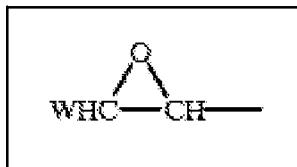
a. At least one chiral polymerizable mesogenic compound having one polymerizable functional group and at least one achiral polymerizable mesogenic compound having one polymerizable functional group.

b. At least one chiral polymerizable mesogenic compound having one polymerizable functional group and at least one achiral polymerizable mesogenic compound having two or more polymerizable functional groups.

6. The polymerizable mesogenic compounds are selected according to formula I: P-  
-(Sp)<sub>n</sub>--MG—R wherein

a. P is a polymerizable group,

i. P is preferably selected from CH<sub>2</sub>=CW--COO--, WCH=CH--O--,



or CH<sub>2</sub>=CH--Phenyl-(O)<sub>k</sub>--, with W being H, CH<sub>3</sub> or Cl and k being 0 or 1.

P is preferably a vinyl group, an acrylate or methacrylate group, a propenyl ether group, a styrene group or an epoxy group. Especially preferably P is an acrylate or methacrylate group.

- b. Sp is a spacer group having 1 to 20 C atoms,
  - ii. As for the spacer group Sp in formula I all groups can be used that are known for this purpose to the skilled in the art. The spacer group Sp is preferably a linear or branched alkylene group having 1 to 20 C atoms, in particular 1 to 12 C atoms, in which, in addition, one or more non-adjacent CH<sub>2</sub> groups may be replaced by --O--, --S--, --NH--, --N(CH<sub>3</sub>)--, --CO--, --O--CO--, --S--CO--, --O--COO--, --CO--S--, --CO--O--, --CH(halogen)--, --CH(CN)--, --CH=CH-- or --C≡C--.
- c. n is 0 or 1,
- d. MG is a mesogenic or mesogenity supporting group, preferably linked to the spacer group Sp and the organic group R by an ester or ether group or a single bond, this mesogenic group being preferably selected of formula II: --(A<sup>1</sup>--Z<sup>1</sup>)<sub>m</sub>--A<sup>2</sup>--Z<sup>2</sup>--A<sup>3</sup>-- wherein:
  - iii. A<sup>1</sup>, A<sup>2</sup> and A<sup>3</sup> are independently from each other 1,4-phenylene in which, in addition, one or more CH groups may be replaced by N, 1,4-cyclohexylene in which, in addition, one or two non-adjacent CH<sub>2</sub> groups may be replaced by O and/or S, 1,4-cyclohexenylene or naphthalene-2,6-diyl, it being possible for all these groups to be unsubstituted, mono- or polysubstituted with halogen, cyano or nitro groups or alkyl, alkoxy or

alkanoyl groups having 1 to 7 C atoms wherein one or more H atoms may be substituted by F or Cl,

iv.  $Z^1$  and  $Z^2$  are each independently --COO--, --OCO--, --CH<sub>2</sub>CH<sub>2</sub>--, --OCH<sub>2</sub>--, --CH<sub>2</sub>O--, --CH=CH--, --C≡C--, --CH=CH--COO--, --OCO--CH=CH-- or a single bond and

v. m is 0, 1 or 2, and

e. R is an alkyl radical with up to 25 C atoms which may be unsubstituted, mono- or polysubstituted by halogen or CN, it being also possible for one or more non-adjacent CH<sub>2</sub> groups to be replaced, in each case independently from one another, by --O--, --S--, --NH--, --N(CH<sub>3</sub>)--, --CO--, --COO-- --OCO--, --OCO--O--, --S--CO--, --CO--S-- or --C≡C-- in such a manner that oxygen atoms are not linked directly to one another, or alternatively R is halogen, cyano or has independently one of the meanings given for P--(Sp)<sub>n</sub>--. (Col. 5, line 20-Col. 6 line 9)

2. The polarizing film is formed by coating a substrate with the mixture recited above, aligning the mixture and then polymerizing it on the substrate. (Col. 5, lines 12-17)

3. The examiner interprets the polarization film recited by Coates to meet the limitation of a barrier layer recited in claim 1 since a polarization film functions as a barrier to light. Coates recites a method and composition that clearly anticipates the limitations set forth in claims 1-8. The film recited by Coates is also recited to be useful

for liquid crystal displays therefore anticipating the limitations set forth in claims 9, 11 and 12.

4. Claims 1, 10, 13 and 14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by 5,707,691 (hereafter referred to as Plester).
5. Plester teaches applying liquid crystal mesogenic compounds on the surface of a PET bottle and thereafter polymerizing them in order to form a barrier coating. (Col. 2, lines 59-65)
6. The liquid crystal barrier layer polymerized on the surface of the PET bottle recited by Plester clearly anticipates the limitations set forth in claims 1, 10, 13 and 14 since PET bottles are widely used for food and medical applications.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELE JACOBSON whose telephone number is (571)272-8905. The examiner can normally be reached on Monday-Thursday 8:30 AM-7 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michele L. Jacobson  
Examiner /M. J./  
Art Unit 1794

/Carol Chaney/  
Supervisory Patent Examiner, Art Unit 1794